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Isolation of a Feather-Degrading Bacteria From the Plague of Reptiles

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Molting in birds represents a significant energy drain and is generally timed to coincide with seasonal abundance; however, non-seasonal molting is common. In order to justify the extreme physiological stress of non-seasonal molting, a significant benefit must be gained by the bird. One possible hypothesis for this is that feather-degrading bacteria, normally present on the plumage, could lead to significant deterioration of the feather's microstructure if it were not molted. Ib order to test this hypothesis, feathers collected from raptor plumage were placed in cultures of nutrient broth and observed for bacterial growth. Cultures that developed turbidity were streak plated onto solid TSA medium for isolation. Pure cultures were inoculated into mineral salts medium containing 2-cm sections of whole feathers as a sole carbon source. Isolates that demonstrated ability to degrade feathers into less than 0.5-mm sections were identified through standard laboratory tests. Of the ten birds collected for testing, none yielded cultures for enrichment and isolation. Of these nine birds, an average of 2.2 feather-degrading bacteria were isolated per individual bird. All isolates have been determined to be Gram positive, endospore forming rods, which indicates that they belong to genus *Bacillus*.